

**DRAFT ENVIRONMENTAL ASSESSMENT**  
**WITH**  
**UNSIGNED FINDING OF NO SIGNIFICANT IMPACT**

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**Frank Russell Recreation Area Resort Concession**  
**Mark Twain Lake, Missouri**

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**U.S. Army Corps of Engineers**  
**St. Louis District**  
**Environmental Analysis Branch (CEMVS-PM-E)**  
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**August 2004**

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1. Introduction

- 1.1. Subject: This report constitutes the St. Louis District's environmental assessment (EA) of a proposed resort development (based on a conceptual design) in the Frank Russell Recreation Area at Mark Twain Lake in Missouri. The study area boundaries for the project include all lands and features inside the dotted lines as shown in Figure 1.
- 1.2. Purpose: The purpose of this report is to identify the impacts the proposed development may have on the environment, including physical, biological, cultural, visual and socioeconomic.
- 1.3. Scope: This EA will address the recommended plan as well as alternatives discussed in the 2001 feasibility study entitled *Market Potential and Feasibility Analysis of Commercial Concession Development at Mark Twain Lake, Missouri*.
- 1.4. Plan of development of report: Included in this EA is a description of the need for this project, a description of the tentative design of the proposed resort as well as alternatives, a description of the current environment, the potential impacts of the project on the environment, and an evaluation of alternatives. An unsigned FONSI is attached.

2. Need for Project

- 2.1. Need for project: Currently, the Mark Twain Lake Project has no lodging or resort development on shoreline lands. Most of the commercial development that supports the project has occurred on private land, primarily along the eastern portion of the lake along State Route J, and in Monroe City and Perry, Missouri. Developments include campgrounds, a water park, convenience stores, bait shops and motels.

The January 2001 market feasibility study entitled *Market Potential and Feasibility Analysis of Commercial Concession Development at Mark Twain Lake, Missouri*, prepared by Parsons HBA for the Corps reinforced the need for lakeside lodging with ancillary marina facilities. The Corps of Engineers supports the opportunity to improve commercial development at the lake through private investment. Twelve potential commercial development locations on the shoreline were identified and evaluated in the study. A summary of the feasibility study is provided in Appendix 2.

The Corps supports commercial development at Mark Twain Lake and believes a key ingredient to improving future benefits and economic development in the area includes lodging and/or resort development on shoreline public lands.

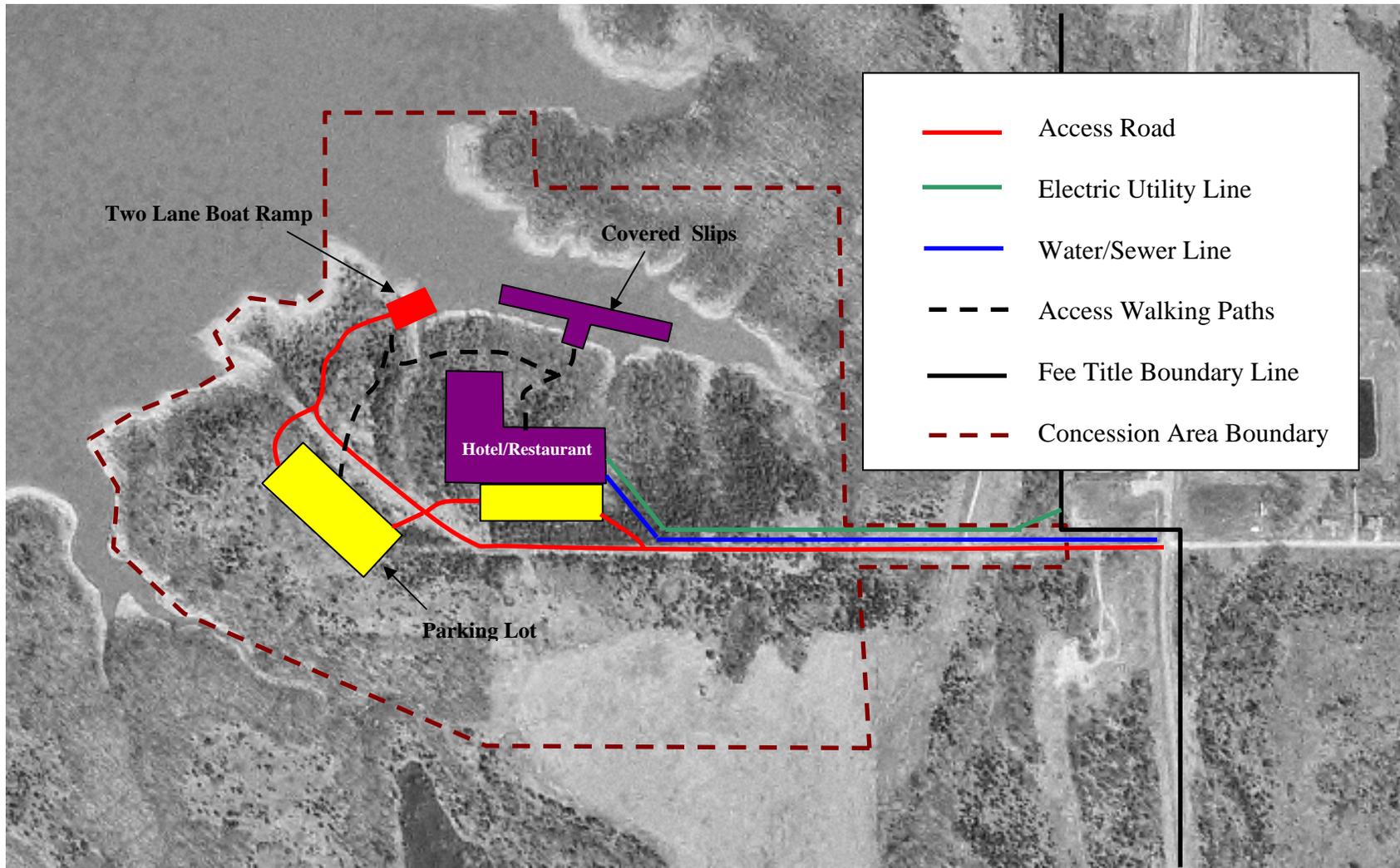
- 2.2. Economic ramifications: If this project is not completed, local economic growth may continue at a slow pace and the demand for a resort on the water would be unmet. The resort concession development will bring in visitors to the area that may not have stayed at the project before and may attract others to the area that would be interested in the various amenities a resort may offer.
- 2.3. Environmental ramifications: The development of the resort will impact an upland site that includes former farm sites and a borrow area used for construction of the Cannon Dam. The higher quality habitat areas will be avoided as well as important cultural sites. A total of 331 acres may be impacted, but that total in the final design may be less than 200 acres.

3. Description of Proposed Project

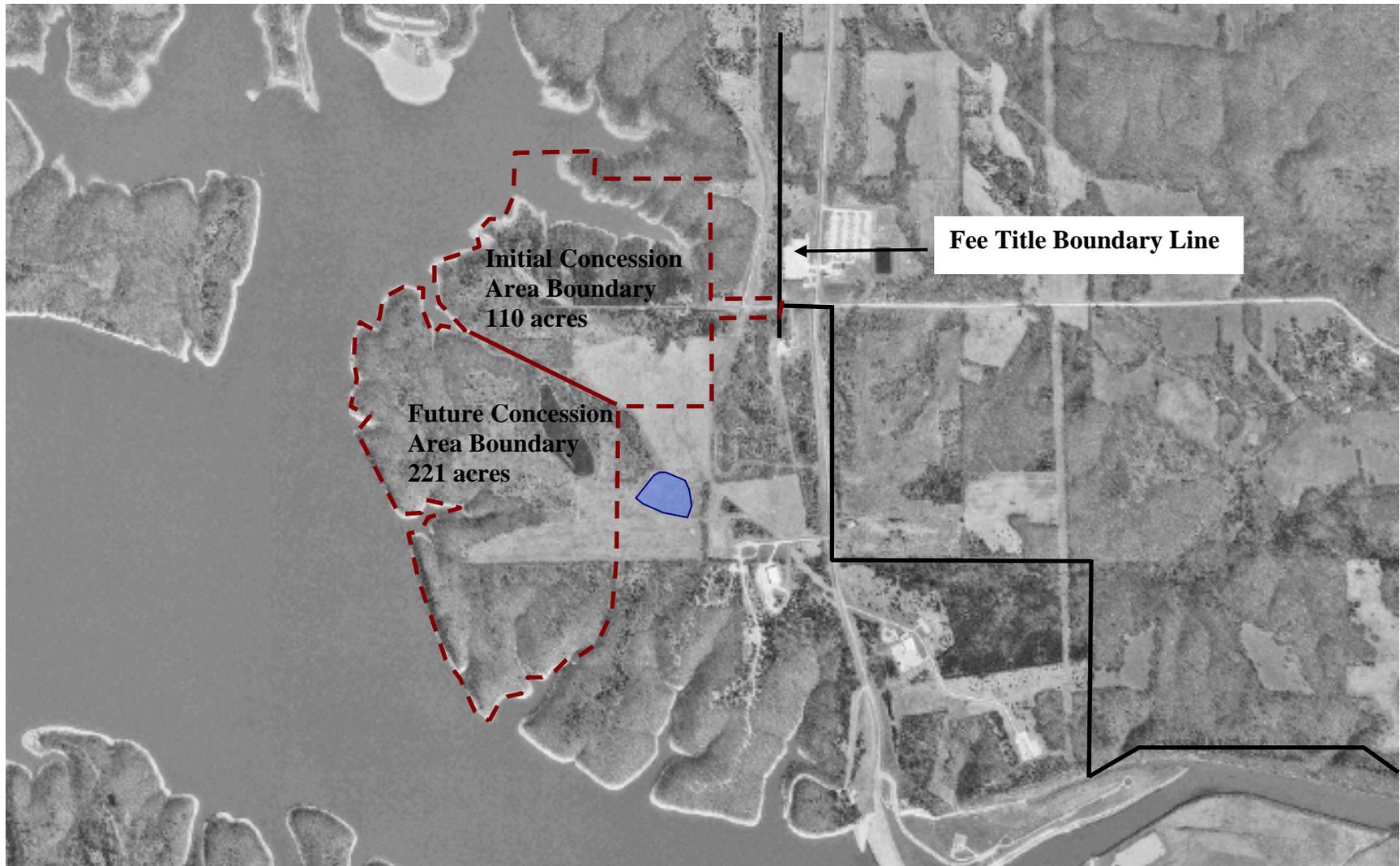
- 3.1. Proposed project: The proposed project includes a lodging development on the lake shoreline with ancillary marina facilities. A resort concession has been included in the master plan for the lake since its inception. The initial phase of the proposed project is a concession resort complex on 110 acres that may include a 100-unit lodge, a large parking lot, a boat ramp and associated parking lot, and a 100-slip courtesy boat dock with gas sales as shown in Figure 1. A future phase of the project may include development of a golf course (not required) on 221 acres as shown in Figure 2. The project would be constructed after receipt and approval of a resort development plan. Groundbreaking would be likely to occur in 2006.
- 3.2. Mitigation measures: No mitigation measures are required due to the upland location of this project.

4. Description of Affected or Baseline Environment and Impacts

- 4.1. Components changed by project proposal: The environmental components that may be affected by the proposed project are addressed below.
- 4.1.1. Physical-chemical
- 4.1.1.1. Atmosphere: Other than increased dust levels during construction, no permanent significant changes to air quality are anticipated.
- 4.1.1.2. Water Quality: The boat ramp, lodge, boat dock, and ancillary marina facilities will be designed and constructed to standards to prevent siltation in the waterways and the lake and pollution of lake waters.
- A small pond stocked with fish is located directly east of the future concession area boundary. Development projects will be planned avoid adverse impacts to the pond.
- If the future phase of development includes a golf course, a low-impact golf course design will be considered at the time of golf course design and development. If the future development phase includes a golf course that requires intensive lawn maintenance, best management practices to ensure that herbicide and fertilizer runoff do not affect the small pond and Mark Twain Lake will be implemented. Measures to reduce the possibility of fuel spills at the marina will also be implemented according to state and federal regulations.
- 4.1.1.3. Earth
- 4.1.1.3.1. Soils: The borrow site component of the proposed resort concession area occupies approximately 30 acres. This is basically represented by the cool season grass area on the vegetative cover map (Figure 4). The soil material in this area was utilized in the construction of the earthen portion of Clarence Cannon Dam. Approximately 8 feet of material was removed from this site. The remaining soil on this site is characterized as dense clay.



**Figure 1: Clarence Cannon Dam and Mark Twain Lake, Frank Russell Recreation Area  
Initial Phase of Concession Development, Conceptual Design**



**Figure 2: Clarence Cannon Dam and Mark Twain Lake, Frank Russell Recreation Area  
Initial and Future Concession Area Boundary – 331 acres**

- 4.1.1.3.2. Land form: Some grading of the landscape will be required during construction of the resort and associated facilities. The boat ramp, boat ramp access road, parking lots and a potential golf course may require significant land contouring. Approximately 15 acres of old field habitat comprised mostly of eastern red cedar may be impacted by this activity in the initial phase. Approximately 65 acres of grass fields would be impacted in the future concession phase. No significant impacts are anticipated with this activity. The cove where the marina facilities will be located was excavated before the lake was inundated. No dredging will be required.
- 4.1.1.3.3. Unique physical features: The bluff areas located on the west side of the Frank Russell Recreation Area have significant visual appeal. The bluff areas will be avoided due to their aesthetics and forested areas.
- 4.1.1.3.4. Floods: The resort will be located above the high water line, approximately 636 NGVD. Only the boat ramp and docking facilities will be below this line. Those facilities will be built to accommodate the variation in water levels.
- 4.1.1.3.5. Erosion: During construction, all standard practices to prevent sedimentation of waterways, intermittent streams and the lake will be implemented.

4.1.2. Biological

4.1.2.1. Flora:

Vegetative cover: Figure 4 shows the vegetative cover in the project area. The initial resort complex development will primarily impact the eastern red cedar area. Approximately 15 acres of eastern red cedar will be impacted by resort construction. Oak trees, both dead and alive, are located in a thin strip around the cove where the marina facilities will be located as shown in Figure 3. Some of these trees may provide habitat for the Indiana bat. Construction will be scheduled to avoid the period when bats are present. No significant impacts are associated with the resort development in this area.

The future development phase would impact the eastern red cedar, the warm and cool seasons grass fields and the oak/hickory pole timber areas. The oak/hickory pole timber areas will be avoided as much as possible during design and development of the future phase.

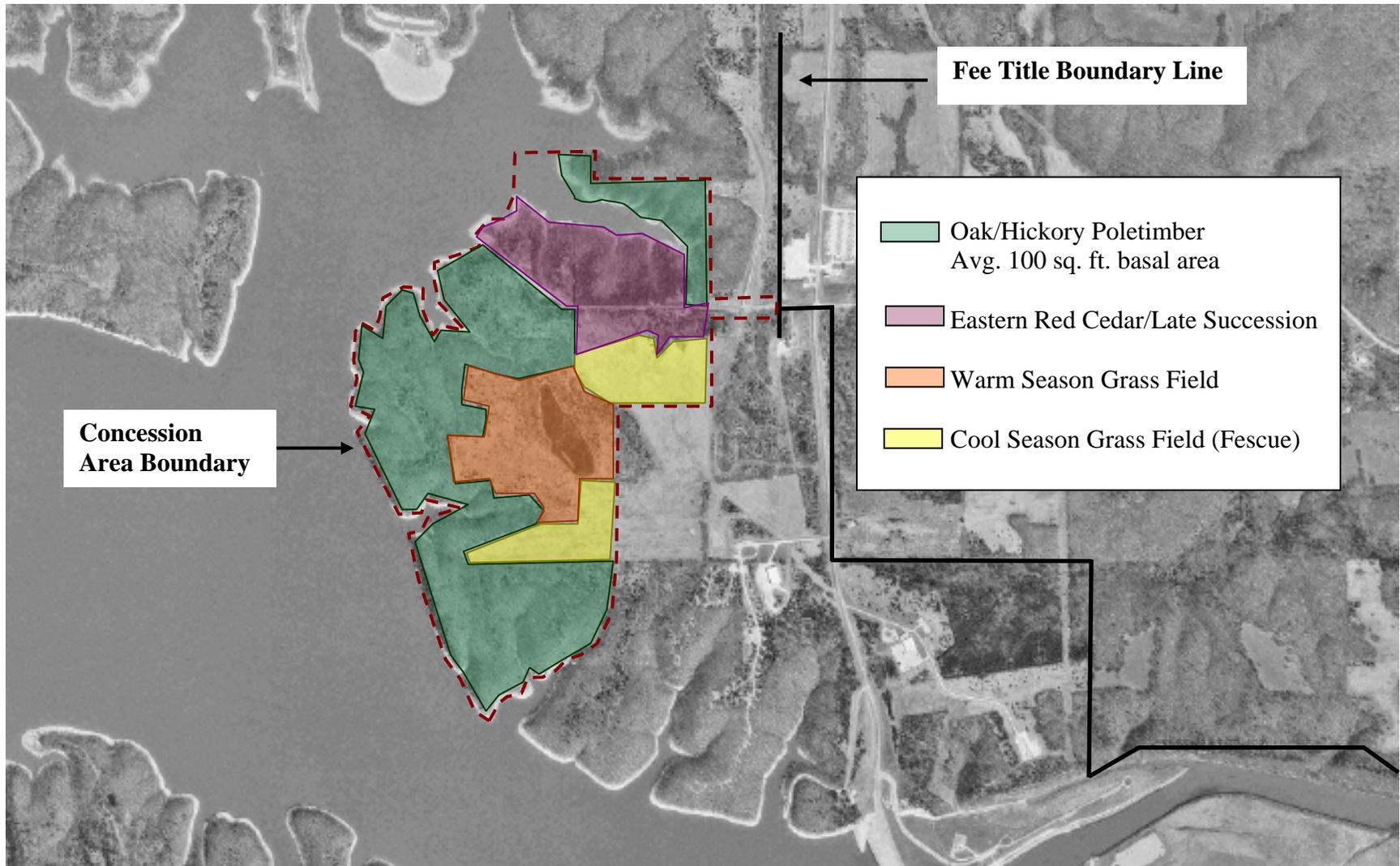


**Figure 3 Proposed Harbor Area and Shoreline**

4.1.2.1.1. Trees: The forested component of the proposed resort concession area occupies approximately 134 acres. It is classified as an oak/hickory forest cover type. The general species composition is white oak (*Quercus alba*), black oak (*Quercus velutina*), northern red oak (*Quercus rubrum*), and shagbark hickory (*Carya ovata*). Other associated overstory species are black cherry (*Prunus serotina*), black walnut (*Juglans nigra*), and sugar maple (*Acer saccharum*). The majority of the forest has a dense sub-canopy of sugar maple. The general topography of the forest component is moderate to steep slopes.

The eastern red cedar stand component of the proposed resort concession area occupies approximately 45 acres. The main forested component of the initial phase site is the eastern red cedar (*Juniperus virginiana*) with other associated successional tree species, such as black cherry (*Prunus serotina*), shingle oak (*Quercus inbricaria*) and elm (*Ulmus* spp.). The stand is densely stocked. The topography is gently to moderately sloping.

Tree removal will be kept to a minimum as part of the construction of this project, especially near the lake and along the ephemeral streams in the project area. Additionally, due to the possible presence of Indiana bats, the removal of trees suitable for maternity roost sites will be restricted, as much as possible, to the period when the bats are not present.



**Figure 4: Clarence Cannon Dam and Mark Twain Lake, Frank Russell Recreation Area Vegetative Cover**



**Figure 5 - Cool Season Grass Area**

4.1.2.1.2. Grasses: The main vegetative component of the 32-acre cool season grass area is tall fescue (*Festuca arundinacea*), sweet clover (*Melilotus* spp.), and sericea lespedeza (*Lespedeza cuneata*). There are many eastern red cedars (*Juniperus virginiana*) scattered throughout the area. The general topography of the cool season grass field is gently sloping as shown in Figure 5. This was the borrow site for the main dam.

The warm season grassland component of the proposed resort concession area occupies approximately 33 acres. It is composed of big bluestem (*Andropogon gerardi*), little bluestem (*Andropogon scoparius*), and Indian grass (*Sorghastrum nutans*). Associated prairie forbs also occupy the area. There are many eastern red cedars (*Juniperus virginiana*) scattered throughout the area. The warm season grass field is burned on a 3-5 year rotation to maintain the vegetative component. The general topography of the warm season grass field is ridge top to gentle slope

The warm and cool season grass areas would be impacted by the future development phase of the project. Although the cool season grass area is rather poor quality habitat due mostly to the soil conditions, the warm season grass has been managed by the Corps and has become good habitat for quail. No significant impacts are anticipated with the development of these sites.

#### 4.1.2.2. Fauna

4.1.2.2.1. Endangered species: In compliance with Section 7(c) of the Endangered Species Act of 1973, as amended, the U.S. Army Corps of Engineers requested the U.S. Fish and Wildlife Service (USFWS) to provide a listing of federally threatened or endangered species, currently

classified or proposed for classification that may occur in the vicinity of the Frank Russell Recreation Area. The USFWS, Columbia, Missouri, Ecological Services Field Office has indicated by correspondence that three federally listed species have ranges that include the project area. There is no designated critical habitat in the project area.

The Missouri Department of Conservation (MDC), Policy Coordination Section has indicated by correspondence that three state endangered species may occur in the project area, but no sensitive communities are known to occur in the project area.

The three listed species that may occur within the proposed project site include the bald eagle (*Haliaeetus leucocephalus*), the Indiana bat (*Myotis sodalis*) and the gray bat (*Myotis grisescens*). Bald eagle nest sites do not occur within the proposed resort area. Indiana bat maternity roost sites may be present in the oak-hickory pole timber. These sites will be avoided when bats are present. The gray bat uses caves or mine/quarry openings. No caves or mine/quarry openings are present in the project area.

The following table shows the threatened and endangered species that have ranges that include the project area.

Table 1: Federal and State Threatened and Endangered Species

Common Name	Scientific Name	Federal Status	State Status	Habitat
Indiana bat	<i>Myotis sodalis</i>	E	E	Caves, mines; small stream corridors with well developed riparian woods; upland and bottomland forest
Bald eagle	<i>Haliaeetus leucocephalus</i>	T	E	Breeds and winters along major rivers and large reservoirs.
Gray bat	<i>Myotis grisescens</i>	E	E	Caves and mine/quarry openings.

4.1.3. Socioeconomic

4.1.3.1. Transportation network: The road network that services the area is adequate. The proposed resort will be located off Route J. U.S. Highway 61, a four-lane divided highway, which provides the primary access from the St. Louis Metropolitan Area, is located approximately 15 miles east of the Lake. U.S. Highway 24/36 and State Highways 19 and 154 provide the primary access to Mark Twain Lake from U.S. Highway 61. Any increase in traffic related to the resort complex will not significantly impact the road network in the area.

4.1.3.2. Utility networks: The necessary utilities, sewer, electric and water are located very close to the entrance of the old road that crosses the initial development area from east to west.

- 4.1.3.3.Waste disposal: The sewer wastewater treatment plant in the John F. Spalding Recreation Area was recently expanded to handle additional inflow (a 50 room lodge) from an anticipated resort development in this area. Expansion of this facility will be necessary to accommodate a resort with more than 50 units.
- 4.1.3.4.Economy: The economic impact of the proposed resort was addressed in a marina and lodging feasibility report entitled *Market Potential and Feasibility Analysis of Commercial Concession Development at Mark Twain Lake, Missouri* funded by the Corps of Engineers and completed in January 2001. In the study, the majority of operators/managers of the local lodging facilities were of the opinion that a resort lodge or hotel on Mark Twain Lake would adversely impact their business considering their modest occupancy rates and the seasonality of lake activities. Rather than develop additional lodging facilities, it was generally their opinion that other issues should be addressed, such as expanding Lake-related activities, including family-oriented activities, to attract more people and lengthen their duration of stay beyond the weekend; improving fish stocking of the Lake and the quality of fishing; and, closer cooperation and coordination between the Federal and State agencies in controlling the levels of the Lake. Fluctuating lake levels was one of the more frequent problems or issues cited by fisherman, slip renters/boat owners, and business people<sup>1</sup>.

As stated in the study, there are approximately 300 motel units<sup>2</sup> within the immediate vicinity of Mark Twain Lake, in addition to a lesser number of cabins and rental condominiums. Current nightly lodging rates for double occupancy range from \$45 to \$70 per night, with prevailing rates in the middle of this range. Prevailing weekend occupancy rates range from 50-80 percent, with 50 percent occupancy reported as the norm by a number of motel operators. One hundred percent occupancy is usually only associated with holidays and special weekend events.

The report also stated that development of a resort lodge/hotel comprising 200 rooms would result in a 50-60 percent increase in the number of overnight lodging units in the immediate area of Mark Twain Lake. Thus, the supply of overnight lodging units would increase substantially. A number of the motel operators/managers interviewed stated that a resort lodge/hotel would be detrimental to their business, and result in higher vacancy rates for current lodging facilities.

However, the consultant who prepared the study stated his professional opinion was that development of a 200-room resort lodge/hotel facility at Mark Twain Lake would not have a substantial adverse economic impact on the existing motel and other lodging facilities in the immediate area. He reasoned that potential guests at the resort

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<sup>1</sup> U.S. Army Corps of Engineers, *Market Potential and Feasibility Analysis of Commercial Concession Development at Mark Twain Lake*, Missouri, p. 30

<sup>2</sup> U.S. Army Corps of Engineers, *Market Potential and Feasibility Analysis of Commercial Concession Development at Mark Twain Lake*, Missouri, p. 35

lodge/hotel would generally represent the higher end income households who can afford or be willing to pay the higher nightly rates associated with this type of lodging facility. The majority of the visitors to Mark Twain Lake who currently use the existing lodging facilities would most likely continue to use these facilities as they would be priced out of the market under the prevailing rates at the new lodge/hotel. In addition, many of the visitors to Mark Twain Lake indicated in their survey responses that they did not stay overnight because of the inadequacy or quality of the existing lodging facilities. Finally, the development of a resort lodge/hotel in addition to other facilities/activities would serve to expand the potential users market of Mark Twain Lake. This larger market would serve to enhance the viability of the current lodging facilities in the area. Any adverse impacts to current lodging operators should be short-term, if any, with longer-term beneficial impacts anticipated. It is important to note that the resort concession analyzed in the report was for 200 rooms, twice that proposed in this study. The impacts associated with a 100-room resort would be less and should not significantly impact the other local competing businesses according to the feasibility report.

Survey results of the general population, conducted in association with the feasibility report, revealed that boat owners and current slip renters at Mark Twain Lake have a strong desire for a quality resort lodge/hotel and associated restaurant at Mark Twain Lake<sup>3</sup>. This demand is not only apparent among the above three groups surveyed, but also obvious among those individuals, businesses and organizations interviewed in the Mark Twain Lake area.

Based on these responses, and observations and analysis by the consultant, the feasibility report recommended that the development of a resort lodge/hotel be given higher priority initially than the development of a third marina at Mark Twain Lake<sup>4</sup>. In addition, it stated that a quality restaurant should be incorporated with the lodge/hotel. The existing market demand could ultimately support a 210-room lodging facility, and a 100-150 seat restaurant. Based upon the location of existing facilities and activity centers at Mark Twain Lake and location relative to the primary market, it was further recommended that these new facilities be developed at the eastern end of the Lake along the Highway J corridor<sup>5</sup>

The development of the proposed resort concession may have a low significant beneficial impact on the economy of the Mark Twain Lake area as well as meet the demand for a quality resort on the lake's shoreline lands.

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<sup>3</sup> U.S. Army Corps of Engineers, Market Potential and Feasibility Analysis of Commercial Concession Development at Mark Twain Lake, Missouri, p. 37

<sup>4</sup> Ibid.

<sup>5</sup> Ibid.

4.1.3.5. Historical or archaeological sites and objects: The proposed concession area was investigated for historic properties by District personnel during the week of 26 July 2004. Analysis and reporting of the investigation are on-going, but preliminary conclusions follow. The initial concession area contained two bulldozed farmsteads, including previously recorded site 23RAHR4, and a few isolated prehistoric artifacts. Historic site 23RAHR4 was determined ineligible for listing on the National Register of Historic Places during the preimpoundment investigations. The other farmstead and isolated prehistoric artifacts have been determined ineligible based on lack of data producing potential and integrity by the District.

In the future concession area, prehistoric site 23RA75 was relocated; also one or two additional prehistoric sites and another bulldozed farmstead were recorded. The District is still assessing the eligibility of the prehistoric sites. The District also has determined the farmstead to be ineligible based on insufficient data producing potential and integrity. Official site numbers will be obtained from the Archaeological Survey of Missouri/MSHPO.

The District will coordinate the determinations eligibility or ineligibility for the sites and isolated artifacts with the Missouri State Historic Preservation Officer (MSHPO). If any site requires Phase II eligibility testing, this activity will be coordinated with the MSHPO. Any site determined eligible by the District will then be mitigated (avoidance or excavation), again in coordination with the MSHPO.

4.1.3.6. Recreation: The opportunity to obtain lodging with courtesy boat slips will draw visitors from the local area as well Columbia, St. Charles, and St. Louis in Missouri and other locations in Illinois and Iowa. Recreation use will not increase substantially, but the opportunity for higher quality lodging and recreation experience will be provided. A low significant beneficial impact is anticipated.

#### 4.1.4. Visual

##### 4.1.4.1. Aesthetics

4.1.4.1.1. Scenic views and vistas: The most aesthetic area in the Frank Russell Recreation Area is located on the western portion of the area. The proposed resort concession development will be designed to avoid impacts to this area.

4.1.5. Interpretation of existing quality: Existing quality of the resource is good. The eastern red cedar woods, oak-hickory pole timber and warm season grass areas are providing good habitat for wildlife including white-tailed deer, turkey and quail. Most of this higher quality habitat will be avoided and overall impacts will not be significant.

4.2. Summary of environmental factors and impacts:

4.2.1. The following table summarizes the impacts to listed environmental factors

Table 2 – Environmental Factors and Impacts

<b>Environmental Factor</b>	<b>Predicted Impact</b>	<b>Method used for Prediction</b>	<b>Interpretation of Impact Significance</b>	<b>Basis for Significance Determination</b>
Air Quality	Temporary and minimal	Professional judgment	WNV	Professional judgment
Water Quality	Temporary and minimal	Professional judgment	WNV	Professional judgment
Landform	Permanent but Minimal	Professional judgment	WNV	Professional judgment
Noise	Temporary and minimal	Professional judgment	WNV	Professional judgment
Aquatic habitat	Minimal	Professional judgment	WNV	Professional judgment
Terrestrial habitat	Minimal	Professional judgment	WNV	Professional judgment
Cultural	None, eligible sites will be mitigated	Area was surveyed for cultural items in August 2004	No impacts	Professional judgment
Visual	Minimal change to aesthetics	Professional judgment	WNV	Professional judgment
Socioeconomic	Improved local economics as more visitors lodge on or near the lake	Lodging and marina feasibility study (2001)	LS – This project will ultimately have a small beneficial impact on local economy.	Professional judgment
Recreation	Improve quality of recreation experience	Professional judgment	LS – This will be the only project on the lake that will lodge with courtesy boat docks.	Professional judgment
S = Significant impact; MS = moderately significant impact; LS = low significant impact WNV = expected change within normal variations for factor				

5. Issues and Concerns

- 5.1. The selected plan and proposal will be reviewed by the Regulatory Branch for requirements pertaining to Section 404 of the Clean Water Act.
- 5.2. An Environmental Baseline Study completed by the Corps on 29 June 2004 concluded that no hazardous materials were spilled or disposed of in the proposed project area.

6. Summary of Evaluation of Alternatives

- 6.1. Description of alternatives: A description of the alternatives considered in the lodging and marina feasibility study is presented in Appendix 1.

- 6.1.1. No Action – The No Action alternative would allow the proposed project site to continue in succession, except for the areas being managed for wildlife, e.g., the warm season grass area. The oak-hickory and eastern red cedar would continue to mature; the cool season grass area would generally remain open. This alternative is unacceptable because it does not address the current demand for a resort concession on the water near other amenities on the eastern end of the lake.

- 6.1.2. Provide an area of the Frank Russell Recreation Area for lease and resort development. Typical development would consist of a 100 unit lodge facility with restaurant, 100 courtesy boat slips, a boat ramp and parking lots. (Recommended Plan)

- 6.1.3. Develop lodging at existing marina facilities: The lake manager has indicated that one marina has plans for a lodging expansion of 25 to 30 rooms at this time. If that development were to materialize, the total rooms proposed would still be well within the projected 210 rooms needed to meet current demand. This alternative is unacceptable because it does not address the current demand for a large scale resort.

- 6.1.4. Develop lodging and marina at another project location: Three other locations around the lake received high scores when an analysis of site characteristics for resort development was completed. In addition to the Frank Russell site, the Mark Twain State Park site off of Highway 107 and Route U, the John Spalding Recreation Area site off Route J and the previously proposed site for a marina at Mark Twain State Park off Highway U were considered excellent sites as well for various reasons. However, the Frank Russell site was chosen because it provides good access to the water, a deep cove for marina facilities, plenty of room for expansion, a location near other amenities, good access and compatible surrounding land uses (concentrating them in one area).

6.2. Discussion of method used for comparative evaluation: The method used for comparative evaluation of the alternatives was based on four key planning criteria: completeness, effectiveness, efficiency and acceptability. Completeness is the extent to which a given alternative plan provides and accounts for all necessary investments or other actions to ensure the realization of the planned effects. Effectiveness is the extent to which an alternative plan alleviates the specified problems and achieves the specified opportunities. Efficiency is the extent to which an alternative plan is the most cost-effective means of alleviating the specified problems and realizing the specified opportunities, consistent with protecting the nation’s environment. Acceptability is the workability and viability of the alternative plan with respect to acceptance by State and local entities and the public and compatibility with existing laws, regulations, and public policies.

The following table shows that the with-project alternative (Recommended Plan) meets all four of the key planning criteria.

Table 3 – Comparison of Recommended Plan and Alternative

Plan	Completeness	Effectiveness	Efficiency	Acceptability
Without project	N/A	N	N	N
With project	Y	Y	Y	Y

6.2.1. Identification and Evaluation of Alternatives: The project master plan and conclusions developed in the *Market Potential and Feasibility Analysis of Commercial Concession Development at Mark Twain Lake, Missouri* were the basis for making the final decisions regarding the location and economic impact of the proposed facility.

## 7. Relationship of Recommended Plan to Environmental Requirements

Table 1 - Relationship of Recommended Plan to Environmental Requirements

Environmental Act/Executive Order	Compliance
Bald Eagle Protection Act, 42 USC 4151-4157	FC
Clean Air Act, 42 USC 7401-7542	FC
Clean Water Act, 33 USC 1251-1375	FC <sup>1</sup>
Comprehensive Environmental Response, Compensation, and Liability Act, 42 USC 9601-9675	FC
Endangered Species Act, 16 USC 1531-1543	FC
Farmland Protection Policy Act, 7 USC 4201-4208	FC
Fish and Wildlife Coordination Act, 16 USC 661-666c	PC <sup>1</sup>
Food Security Act of 1985, 7 USC varies	FC
Land and Water Conservation Fund Act, 16 USC 460d-4601	FC
National Environmental Policy Act, 42 USC 4321-4347	PC <sup>2</sup>

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Environmental Act/Executive Order	Compliance
National Historic Preservation Act, 16 USC 470 et seq.	PC <sup>1</sup>
Noise Pollution and Abatement Act, 42 USC 7691-7642	FC
Resource, Conservation, and Rehabilitation Act, 42 USC 6901-6987	FC
Rivers and Harbors Appropriation Act, 33 USC 401-413	FC
Water Resources Development Acts of 1986 and 1990	FC
Floodplain Management (EO 11988 as amended by EO 12148)	FC
Prevention, Control, and Abatement of Air and Water Pollution at Federal Facilities (EO 11282 as amended by EO's 11288 and 11507)	FC
Protection and Enhancement of Environmental Quality (EO 11991)	FC
Protection and Enhancement of the Cultural Environment (EO 11593)	FC
Protection of Wetlands (EO 11990 as amended by EO 12608)	FC

FC = Full Compliance, PC = Partial Compliance

1. Full compliance will be attained upon completion of any permitting requirements or coordination with other agencies.

2. Full compliance will be attained upon public review.

Source: U.S. Army Corps of Engineers, St. Louis District.

## 8. References

U.S. Army Corps of Engineers, *Environmental Baseline Study (EBS), Frank Russell Concession Area – Resort/Restaurant and Marina, Mark Twain Lake and Clarence Cannon Dam in Ralls, County, Missouri*, June 2004

U.S. Army Corps of Engineers, *Clarence Cannon Dam and Mark Twain Lake, Salt River, Missouri; The Master Plan*, 2004

U.S. Army Corps of Engineers, *Market Potential and Feasibility Analysis of Commercial Concession Development at Mark Twain Lake, Missouri*, January 2001

U.S. Army Corps of Engineers, *Clarence Cannon Dam & Reservoir, Salt River, Missouri, Final Environmental Statement*, February 1975

## 9. Environmental Preparers and Contributors

The St. Louis District staff members who prepared or contributed to this document are as follows:

Mr. Francis Walton, Biologist

Experience: 6 yrs. Environmental Analysis Branch, 3 yrs. Project Management Branch, U.S. Army Corps of Engineers, St. Louis District

Role: EA Preparation, Environmental Impact Analysis/Endangered Species

Ms. Suzanne E. Harris, Archaeologist

Experience: 19 yrs. Curation and Archives Analysis Branch, U.S. Army Corps of Engineers, St. Louis District; Role: Historic Properties Compliance

Mr. Allen Mehrer, Natural Resources Specialist

Experience: 15 yrs. Mark Twain Lake, U.S. Army Corps of Engineers, St. Louis District

Role: Natural Resources Management

Mr. Denny Foss, Operations Manager

Experience: 30 yrs. Construction-Operations Division, U.S. Army Corps of Engineers, St. Louis District

Role: Operations Manager, Project Manager

Mr. Rob Gramke, Regulatory Specialist

Experience: 10 yrs. Regulatory Specialist, U.S. Army Corps of Engineers, St. Louis District

Role: Section 404 (b)(1) Compliance

#### 10. Coordination, Public Reviews and Responses

The St. Louis District has coordinated with the U.S. Fish and Wildlife Service and Missouri Department of Conservation during the preparation of this document. Correspondence provided by the federal and state agencies and the Corps is found in Appendix 3. The Draft Environmental Assessment and Unsigned FONSI will be posted on the St. Louis District's web page at <http://www.mvs.usace.army.mil/> for a 30-day public comment period. All associated letters, comments, and responses will be filed with this document (Appendix 3).

All comments should be sent to:

U.S. Army Corps of Engineers  
Attn.: Mr. Francis Walton (PM-E)  
1222 Spruce Street  
St. Louis, MO 63103

Email responses can be addressed to [Francis.J.Walton@mvs02.usace.army.mil](mailto:Francis.J.Walton@mvs02.usace.army.mil).

The Draft Environmental Assessment and Unsigned Finding of No Significant Impact were sent to the following elected officials, agencies, organizations, and individuals for review and comment:

Rick Hansen U.S. Fish and Wildlife Service Columbia Ecological Services Field Office 101 Park DeVille Drive, Suite A Columbia, MO 65203-0007	Janet Sternburg Policy Coordinator Missouri Department of Conservation P.O. Box 180 Jefferson City, MO 65102	Honorable Kenny Hulshof Representative in Congress, 8 <sup>th</sup> District 201 North Third Street, Suite 230 Hannibal, MO 63401
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Blackjack Marina Mr. John Gilmore, Manager PO Box 310 Perry, MO 63462	Ms. Judy Deel, MDNR Historic Preservation Program PO Box 176 Jefferson City, MO 65102-0176	Sierra Club Ozark Chapter Mr. Ken Midkiff 1007 N. College, Suite 1 Columbia, Missouri 65201
Mr. Bob Anderson National Park Service 601 Riverfront Drive Omaha, NE 68102-4226	Indian Creek Marina Mr. Larry Spalding, Manager PO Box 157 Monroe City, MO 63456	Mayor, Perry Jim Talbott P.O. Box 280 Perry, MO 63462
U.S. Environmental Protection Agency Attn: Mr. Joe Cothorn Environmental Services Division, NEPA Team 901 N. 5th Street Kansas City, KS 66101	Tri-City Commission Director – Jim Diffenderfer PO Box 462 Perry, MO 63462	<u>Lodging Owners</u> Mark Twain Landing, Ivan Whorten Country Inn, Cheryl Brown Al Johnson, Timber Ridge Lodge Rainbow Motel, Didi Patel Monroe City Inn, Didi Patel Southfork Resort, Jim Eleile Junction Inn, Stan Smith Cannon Dam Operations (Resort and General Store), Gene Meyer Windmill Resort, Kevin Hahn Bel-Air Motel, Gina Jones Lake Village, Jack and Laura Hackley
Mark Twain Lake Chamber of Commerce PO Box 59 Perry, MO 63462	Honorable Wes Shoemyer Missouri Representative 16350 Monroe Road, 184 Clarence, MO 63437	
Mr. Charles Hess MDNR – Mark Twain State Park 20057 State Park Office Road Stoutsville, MO 65283	Honorable John Cauthorn Missouri Senator 23712 Audrain Road, 364 Mexico, Missouri 65265	
Mr. John Browning Mayor, Monroe City P.O. Box 67 Monroe City, MO 63456	Paris Area Chamber of Commerce 208 N. Main St. Paris, MO 65275	Perry Area Chamber of Commerce Perry, MO 63462

## **Appendix 1 - Alternative Sites Considerations**

### **A. Alternative Sites Considerations.**

Appendix D of the feasibility study contains a detailed analysis of twelve alternative sites in the form of suitability matrices, and an explanation of the methodology used in site selection and analysis. Each site was graded for site attributes/deficiencies, with an overall composite score given to each site. Three sites were ultimately selected based on the highest composite scores.

The three sites receiving the highest scores and having the most appropriate suitability for resort development are the Mark Twain State Park site off Highway 107 and Route U; the John Spalding Recreation Area site off Route J; and the Frank Russell Recreation Area site off Route J. The previously proposed site for a marina at Mark Twain State Park off Highway U also received one of the higher scores and was considered a suitable resort site as well. However, in the interest of diversity and considering the proximity of another site receiving a high score, the next highest scoring site (Frank Russell Recreation Area) was chosen to represent the third proposed resort development site.

#### **1. Mark Twain State Park Site**

The Mark Twain State Park site has numerous advantages for resort lodge type development. Adjacent complementary and compatible land uses, partial in-place infrastructure, nearby tourist draw (Mark Twain Park and Shrine) enhance its desirability as a resort location.

Site Advantages include the following:

- Accessible to majority of primary market.
- Existing roads are highly developed and can handle increased capacity.
- Moderately high visibility from major roads.
- Proximity to major transportation routes.
- Moderately easily developable land.
- Good access to water frontage.
- Excellent vegetation and space qualities.
- Nearby Mark Twain Monument is a tourist draw, making cross marketing a possibility.
- Some utilities are nearby and can be easily extended.
- Recreation facilities are abundant and nearby within the State Park.
- Few environmental restrictions.
- Compatible surrounding land uses.
- Ample room on site for development.

## **2. John Spalding Recreation Area Site**

The John Spalding site benefits from nearby and convenient access directly off Highway J, the main north-south artery on the east side of the Lake; location within the current primary area of activity; adjacent compatible and similar uses; and abundant recreation facilities nearby.

Site advantages include the following:

- Existing high quality roadways leading to the site.
- Visibility is excellent.
- Sheltered cove buffers.
- Easy and convenient accessibility off main highway.
- Adjacent amenities and recreation opportunities.
- Moderately easily developable land.
- Good access to water frontage.
- Excellent vegetation and space qualities.
- Some utilities are nearby and can be easily extended.
- Recreation facilities are abundant and nearby within the John Spalding Recreation Area.
- Few environmental restrictions.
- Compatible surrounding land uses.
- Ample room on site for development.
- Similar adjacent uses.

## **3. Frank Russell Recreation Area Site (Recommended plan)**

The Frank Russell Recreation Area, adjacent to the John Spalding Recreation Site, also benefits from its nearby and convenient access directly off Highway J; adjacent compatible and similar uses; and abundant recreation facilities nearby.

Site advantages include the following:

- Existing high quality roadways leading to the site.
- Visibility is excellent.
- Easy and convenient accessibility off main highway.
- Adjacent amenities and recreation opportunities.
- Moderately easily developable land.
- Good access to water frontage.
- Excellent vegetation and space qualities.
- Some utilities are nearby and can be easily extended.

- Recreation facilities are abundant and nearby within the John Spalding Recreation Area.
- Few environmental restrictions.
- Compatible surrounding land uses.
- Ample room on site for development.
- Similar adjacent uses.

**B. Development Cost Analysis: Resort Lodge/Hotel**

Site development costs were calculated and estimated for each of the above three sites. The costs are based on development of a 200-room resort lodge/hotel with a restaurant, and associated parking. Major costs include site preparation, paving and surfacing of access roads and parking areas, and utilities. Soft costs, such as surveying, engineering, construction management, etc., are not included in the cost estimates. As indicated in Table A-1 site development costs range from \$935,500 for the Mark Twain Park site to \$1,287,320 for the Frank Russell site. Each of the three sites would entail the same type of development costs, with the individual costs varying from site to site. Each site would eventually require a package sewage treatment plant to accommodate the development at full build-out, and extension of water lines and electric service

<b>Table A-1 Site Development Cost Estimates: Alternative Resort Lodge/Hotel Sites</b>			
<b>Cost Item</b>	<b>Mark Twain State Park Site</b>	<b>John Spalding Site</b>	<b>Frank Russell Site</b>
<b>Site Preparation</b>			
Clearing/Grubbing	\$ 35,000	\$ 35,000	\$ 49,000
Earthwork	96,800	96,800	135,520
Rock Excavation	290,400	290,400	406,800
<b>Paving and Surfacing</b>			
Road Improvements	45,000	85,000	150,000
Parking area	105,000	105,000	105,000
<b>Utilities</b>			
Sewers/Treatment Plant	300,000 *	300,000*	300,000*
Water	22,500	42,500	75,000
Primary Electric	10,800	20,400	36,000
Secondary Electric	30,000	30,000	30,000
<b>Total Costs</b>	<b>\$935,500</b>	<b>\$1,005,100</b>	<b>\$1,287,320</b>
* The Corps of Engineers completed expansion of treatment facilities at the Frank Russell and John Spalding Recreation Areas that will accommodate a 50-room lodging facility in each area. The developer would most likely only have to add lift stations and distribution lines in the initial phase of development if limited to 50 rooms. <i>Source: Parsons Harland Bartholomew &amp; Associates estimates.</i>			

## **Appendix 2 - Feasibility Study Summary**

### **Market Potential and Feasibility Analysis of Commercial Concession Development at Mark Twain Lake, Missouri – January 2001**

#### **INTRODUCTION**

##### **I.1 Purpose of Study**

The purpose of this study is to update a previous similar study completed in 1988 entitled “*Market Potential and Feasibility Analysis of Commercial Concession Development at Mark Twain Lake, Missouri*” (Horner and Shifrin, Inc.). The primary objectives of the current study include the determination of potential market support for new overnight lodging accommodations, and additional marina capacity either through expansion of existing marinas or the development of an additional new marina at Mark Twain Lake. An additional objective was the selection of three alternative sites for the potential development of a resort hotel or lodge facility at Mark Twain Lake.

##### **I.2 Methodology**

The primary methodology involved in this study included opinion surveys and personal interviews with representatives of concessions, businesses and various organizations in the Mark Twain Lake area. In addition, field site investigations were conducted for the selection and analysis of alternative resort hotel or lodge sites.

Three opinion surveys were conducted which consisted of the following: (1) households representing the general population within a 125-mile radius of Mark Twain Lake (Appendix A); (2) current slip renters at the two marinas at Mark Twain Lake (Appendix B); and (3) owners of pleasure boats within a 100-mile radius of Mark Twain Lake (Appendix C). The general population survey consisted of a telephone survey of 400 randomly selected households within the defined users market area of Mark Twain Lake. The distribution of telephone calls was based on population distribution and reflected the most recent (July, 1999) county population estimates.

The slip renter survey consisted of a mail-out questionnaire to all current slip renters at the Indian Creek Marina and Blackjack Marina at Mark Twain Lake. There were 360 questionnaires mailed of which 213 were completed and returned, for a response rate of almost 60%. The boat owners survey consisted of a mail-out questionnaire in Illinois and a telephone survey in Missouri of randomly selected households with a registered pleasure boat 18 feet or longer in length within the defined users market. Unfortunately, because of the restrictions imposed under the Federal Privacy Protection Act, the desired sample for the boat owner survey was not attained. Detailed results of each survey are located in Appendices A, B and C respectively.

The second major task included personal and telephone interviews with individuals and organizations directly associated with Mark Twain Lake, or located within the Mark Twain Lake immediate area. Individuals and organizations interviewed included the managers/operators of the Indian Creek and Blackjack marinas; the Mark Twain Lake Operations Manager; the Superintendent of the Mark Twain Lake State Park; the Missouri Department of Natural Resources; the Mark Twain Lake Association; motel operators; and local real estate brokers. A summary of these interviews and comments received are contained in Chapter 2 and Appendix E respectively.

An additional major task was the selection and analysis of alternative resort lodge or hotel sites adjacent to Mark Twain Lake. This task involved the preliminary identification and screening of twelve sites in respect to the physical and economic feasibility of developing a resort lodge or hotel. A number of site selection criteria were utilized in the site analysis, with three alternative sites being ultimately selected based on a point system established for each site criterion.

### **I.3 Summary of Previous Study Recommendations**

The previous similar study contained several recommendations regarding the potential for the development of a third marina, and a lodge/hotel resort and restaurant based on an assessment of market demand. Opinion surveys, similar to those included in the present study, were conducted of the general population, boat slip renters and registered boat owners, and formed the primary basis for the conclusions and recommendations.

Recommendations for concessionaire development at Mark Twain Lake in the 1988 study included the following.

- An effective market demand, along with financial feasibility, for justifying the addition of a third marina at Mark Twain Lake or the expansion of the existing two marinas based on the projection of total slip rental demand for 640 slips in the year 2000.
- Market support for an annual demand for 42,200 resort hotel/lodge room nights in the year 2000 based on survey responses. This overnight lodging demand would equate to a 195- room resort hotel/lodge in the year 2000.
- Projected demand for 341,500 meals served in a restaurant associated with a resort hotel or lodge in the year 2000.

### **I.4 Summary of Current Study Recommendations**

It is concluded in this study that the following actions be pursued to enhance the Mark Twain Lake area and user market. These recommendations are based on an analysis of the Mark Twain Lake environment; surveys of slip renters at Mark Twain Lake, boat owners, and the general population; interviews with local businesses and other organizations; and a market analysis of the existing and potential users market for Mark Twain Lake.

- Development of a quality resort lodge/hotel with a quality restaurant and ancillary uses should be a higher priority than development of a third marina. A resort lodge/hotel should preferably be located near the existing activities, attractions and complementary uses along Highway J above the Dam. The location of a resort lodge/hotel near or in the midst of other activities is preferable considering the potential synergistic effect as a result of mutually supporting activities.
- Development of additional activities (including nighttime), especially those oriented to families and older population.
- Consideration of the development of a third marina only after other amenities (i.e. resort lodge/hotel, etc.) are developed. Considering current slip vacancy rates at the two existing marinas in addition to a general lack of other activities and complementary uses for attracting Lake visitors and users, a third marina could have adverse economic impacts on the existing concessionaires.
- If and when a third marina is developed, it should be centrally located on the Lake, preferably in the Highway 107 area or future expansion area of the Mark Twain State Park to take advantage of other amenities (i.e. Mark Twain State Park and Shrine) and create a new activity center. An exclusive sailboat marina may be justified.
- Preservation of the quiet, peaceful, relaxing and pristine environment, which is a major attribute of Mark Twain Lake compared to the majority of the competing lakes as cited by survey respondents. While additional commercial activity may be needed, and encouraged, the primary goal should be that of maintaining and preserving the natural attributes which attract the majority of the visitors and users to the Lake.

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- Improved fish stocking program through better coordination and management by the entities responsible for management and operation of Mark Twain Lake and Clarence Cannon Dam. Since fishing is a major recreational use of the Lake, it is paramount that the quality of fishing be maintained and enhanced through improved stocking in addition to monitoring and coordination of Lake levels to prevent deterioration of this sport.
- Closer monitoring and coordination of the Lake levels between the responsible entities as it affects recreational boating and fishing.
- Expanded marketing and advertising program for Mark Twain Lake, which implies additional funding from the public and/or private sector. The Lake is not well known, even in Missouri, as evidenced by the survey responses from the general population of which 25 percent stated they had never heard of Mark Twain Lake.
- Improved signage on the major highways advertising Mark Twain Lake, inclusive of all three states within the Lake's market area.
- Evaluation of procedures and practices by law enforcement officials in the immediate area of Mark Twain Lake. Excessive or unnecessary law enforcement was frequently cited by area business people as a factor contributing to a negative image of the Lake and the non-return of some visitors.
- Improving the quality and aesthetic appearance of new development on non-Corps managed properties around the Lake. The majority of the existing commercial development in the immediate area of the Lake is not aesthetically appealing and does not reflect consistent higher quality architectural standards. The respective officials of Monroe County and Ralls County should establish special planning and architectural standards, possibly a special zoning district, towards the goal of enhancing and maintaining consistent higher quality and aesthetically appealing development in the immediate Mark Twain Lake area.

## Appendix 3 - Coordination



### MISSOURI DEPARTMENT OF CONSERVATION

*Headquarters*

2901 West Truman Boulevard, P.O. Box 180, Jefferson City, Missouri 65102-0180  
Telephone: 573/751-4115 ▲ Missouri Relay Center: 1-800-735-2966 (TDD)

JOHN D. HOSKINS, Director

July 26, 2004

Mr. Francis Walton  
U.S. Army Corps of Engineers  
1222 Spruce Street  
St. Louis, Missouri 63103-2833

Dear Mr. Walton:

Re: Environmental Assessment for Proposed Resort in the Frank Russell Recreation Area, Mark Twain Lake, Missouri

Thank you for your letter of 7 July 2004 regarding Department of Conservation (Department) concerns within the proposed project area. Department staff attended the 21 July 2004 on-site meeting to discuss the proposed resort development, its concept design, and location at the Frank Russell Recreation Area. Our comments are noted below. We understand we will be given future opportunity to review and provide comment once designs are completed.

1. A small lake stocked with fish is located directly east of the future concession area boundary. Please ensure that development projects do not cause adverse impacts to the lake. Appropriate erosion control measures should be followed during construction to prevent soil runoff into the lake.
2. If a golf course, or some other feature that requires intense lawn maintenance, is constructed as part of the resort development, best management practices to ensure herbicide and fertilizer runoff do not affect the small lake and Mark Twain Lake should be implemented. Both of these chemicals can adversely affect water quality.
3. Measures to reduce possibility of fuel spills at the marina should be implemented.
4. Tree removal should be kept to a minimum as part of the construction of this project, especially near the lake and along the small ephemeral streams in the project area. Additionally, as Indiana bats (*Myotis sodalis*), a federally and state listed Endangered species, occur in adjacent counties and within 20 miles of Mark Twain Lake, we request that removal of trees suitable for maternity roost sites be restricted, as much as possible, to the period when the bats are not present.
5. A review of our records on Species of Conservation Concern indicates that there are several plants and animals of concern found near the project area. A list of these species is enclosed. This report reflects information we currently have in our database. Many of these species' records were obtained prior to the construction of Clarence Cannon Dam and occurred in the river floodplain or the river. The proposed project is located on high ground, and therefore, is unlikely to support habitat for the majority of

COMMISSION

STEPHEN C. BRADFORD  
Cape Girardeau

ANITA B. GORMAN  
Kansas City

CYNTHIA METCALFE  
St. Louis

LOWELL MOHLER  
Jefferson City

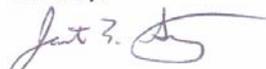
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Mr. Francis Walton  
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July 26, 2004

these species. Species of Conservation Concern in the project area that should be addressed in the Environmental Assessment include bald eagle and Indiana bat. Since we stopped searching for new bald eagle nests in 2001, it is likely that Corps management staff have current records within the project boundary for this species. Gray bats are known from adjacent counties, and if any caves or mine/quarry openings are within the project area, they could be a concern. However, the karst areas of the state represent the prime habitat for the gray bat in Missouri. I have enclosed management guidelines for bald eagle, Indiana bat, and gray bat.

Thank you for the opportunity to review and comment. When site design plans have been developed, we would like the opportunity for additional review. If you have questions regarding these comments, please contact me at (573) 522-4115, Extension 3372, or by e-mail at [janet.sternburg@mdc.mo.gov](mailto:janet.sternburg@mdc.mo.gov).

Sincerely,



JANET E. STERNBURG  
POLICY COORDINATOR

JES:kf

Enclosures (4)

c: Rick Hansen, U.S. Fish and Wildlife Service  
Tom Taylor, U.S. Environmental Protection Agency  
Ross Dames, Missouri Department of Conservation

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**Walton, Francis J MVS**

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**From:** Rick\_Hansen@fws.gov  
**Sent:** Friday, July 23, 2004 9:46 AM  
**To:** Walton, Francis J  
**Cc:** janet.sternburg@mdc.state.mo.us; ross.dames@mdc.mo.gov; Charlie\_Scott@fws.gov  
**Subject:** EA for proposed resort at Mark Twain Lake

Francis:

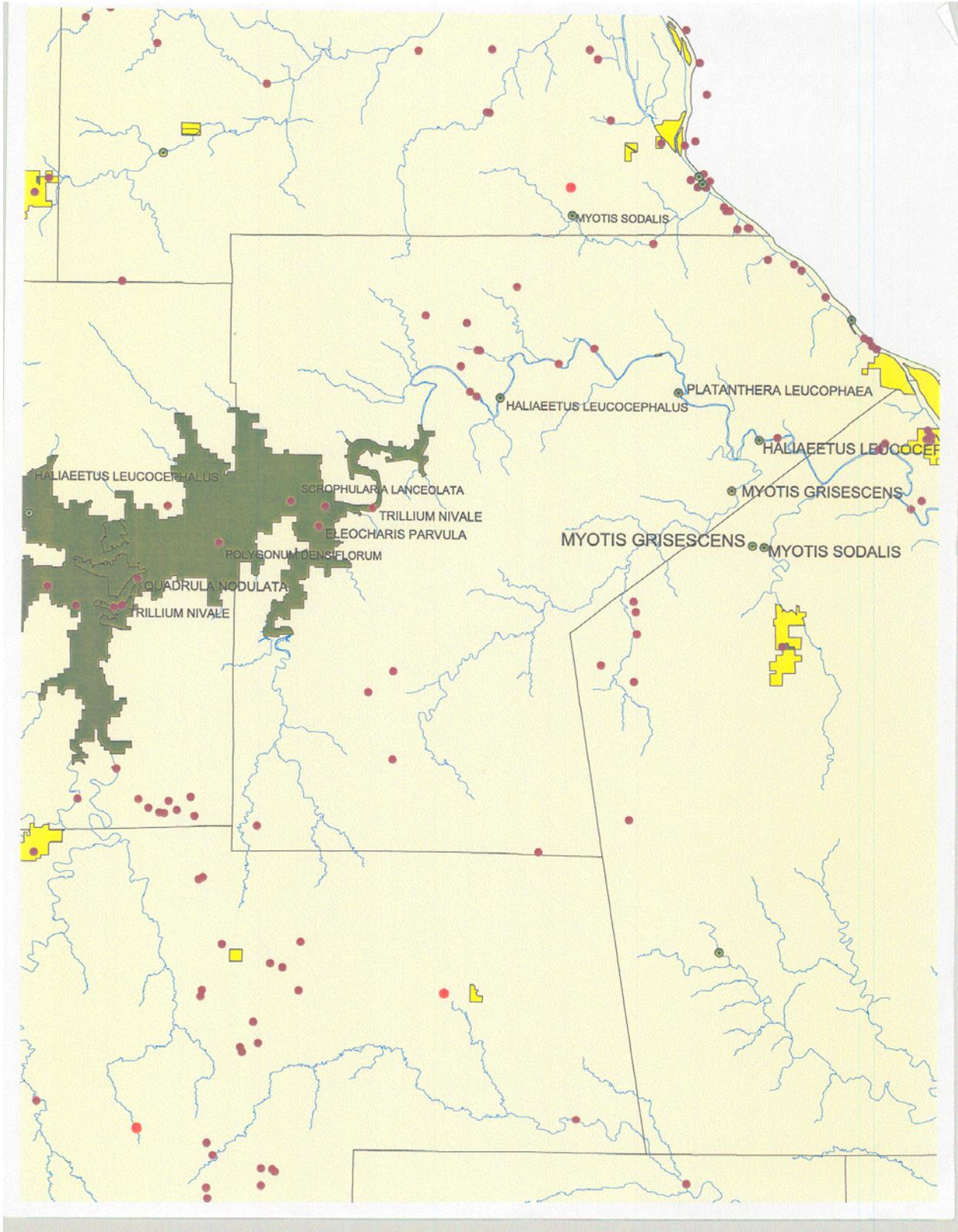
This in reference to your letter dated July 2, 2004 and the subsequent field trip on July 21, 2004, concerning the SLD's preparation of an environmental assessment for a proposed resort in the Frank Russell Recreation Area at Mark Twain Lake in Missouri.

I gave you the heritage data base information for federally listed species, the bald eagle (*Haliaeetus leucocephalus*), the Indiana bat (*Myotis sodalis*) and gray bat (*Myotis grisescens*) which are known to occur in the project area. The lake staff are aware of the many known bald eagle nests that occur on lake property. We also discussed the habitat requirements for the Indiana and gray bat.

If I can be of any additional help, feel free to contact me.

Rick L. Hansen  
U.S. Fish and Wildlife Service  
Ecological Services  
101 Park DeVille Drive, Suite A  
Columbia, Missouri 65203  
573-234-2132, ext. 106  
fax 573-234-2181  
rick\_hansen@fws.gov

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CEMVS-CO-F (1145b)

03 August 2004

MEMORANDUM FOR CEMVS-PM-E (Walton)

SUBJECT: Frank Russell Recreation Area Concession Area, Conceptual Design, Mark Twain Lake, Ralls County, Missouri (CO-F No. 200405460).

1. We have reviewed the submittal concerning the Initial Concession Area Design for the Frank Russell Recreation Area and participated in a site visit on July 21, 2004. The proposed project involves the construction of a hotel/restaurant, boat ramp, covered boat slips, and necessary infrastructure. According to the submittal, the design is tentative and a request for proposal from perspective concessionaires will be going out this fall. These proposals may include alternative and expanded designs not included in the submittal. The project is located in parts of Sections 14, 15, 22, and 23 in Township 55 North, Range 07 West adjacent to Mark Twain Lake, Ralls County, Missouri. Mark Twain Lake is an impoundment on the Salt River.

2. Section 404 of the Clean Water Act assigns responsibility to the Secretary of the Army to administer a permit program to regulate the excavation or placement of dredged or fill material in waters of the United States. The excavation or placement of any dredged or fill material in waters of the United States below ordinary high water elevation or in wetlands, must be authorized by a Section 404 permit.

3. Based on the information provided and a site visit dated July 21, 2004, we have determined that there are small stream channels located on the site that exhibit an ordinary high water mark. These drainage ways appear to be avoided on the conceptual plan. These areas should be avoided and protected by riparian corridors in the final design. If these areas cannot be avoided by the final design, the regulatory branch should be contacted in regards to permits required for associated impacts. In addition, there are nationwide permits that may be used to authorize the proposed boat ramp and marina construction in Mark Twain Lake. The selected plan and proposal should be reviewed further by the Regulatory Branch for requirements pertaining to Section 404 of the Clean Water Act.

4. If you have any questions concerning this matter, please contact Rob Gramke at (314) 331-8187. Please refer to file number 200405460.

  
Rob Gramke  
Missouri Evaluations Section  
Regulatory Branch

FINDING OF NO SIGNIFICANT IMPACT  
Frank Russell Recreation Area Resort Concession  
Mark Twain Lake, Missouri

I. I have reviewed and evaluated the documents concerning the proposed resort concession development at Mark Twain Lake, Missouri.

II. As part of this evaluation, I have considered:

- a. Existing Resources and Future without Authorized Plan (No Action) Alternative.
- b. Impact to Existing Resources with Alternative Plans.
- c. Impact to Existing Resources with Recommended Plan (Action Alternative).

III. The possible consequences of these alternatives have been studied for physical, biological, cultural, social and economic effects. Significant factors evaluated as part of my review included the impacts of the construction of the resort on the upland habitat and water resources and the local socioeconomic impact. No significant impacts were identified.

a. The proposed project includes a resort concession complex on 110 acres in its initial phase. The initial phase of the project may include a 100-unit lodge, a large parking lot, a boat ramp and associated parking lot, and a 100-slip courtesy boat dock with gas sales. A future phase of the project may include development of a golf course on 221 acres.

b. There would be no appreciable degradation to the physical environment (e.g., noise, air quality, and water quality).

c. No impacts to the aquatic organisms in the area are anticipated.

d. Federally listed endangered and threatened species will not be adversely impacted.

e. The impact of the project on wildlife resources would be insignificant.

f. There would be no adverse impacts to historic properties.

g. The recommended plan would require that approximately 331 acres of upland habitat be potentially impacted.

h. The "no action" alternative was evaluated and determined to be unacceptable because it did not address the demand for a resort with limited marina facilities services.

IV. Based on my analysis and evaluation of the alternative courses of actions presented in this Environmental Assessment, I have determined that the proposed resort concession development as described in the Recommended Plan will not have significant effects on the quality of the environment. Therefore, no Environmental Impact Statement will be prepared prior to proceeding with this action.

C. Kevin Williams Colonel, U.S. Army District Engineer
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